UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	
	)	
Imperial Zinc Corporation	)	**FINDING OF VIOLATION**
Chicago, IL	)	
	)	**EPA-5-23-IL-02**
Proceedings Pursuant to	)	
the Clean Air Act,	)	
42 U.S.C. §§ 7401 et seq.	)	
	)	

FINDING OF VIOLATION

The U.S. Environmental Protection Agency finds that Imperial Zinc Corporation (Imperial Zinc) is violating Section 112 of the Clean Air Act, 42 U.S.C. § 7412. Specifically, Imperial Zinc is violating the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Nonferrous Metals Processing Area Sources at 40 C.F.R. Part 63, Subpart TTTTTT at the facility located at 1031 East 103rd Street, Chicago, Illinois 60628 (the Facility) as follows:

Regulatory Authority

1. Section 112 of the CAA, 42 U.S.C. § 7412, requires EPA to promulgate a list of all categories and subcategories of new and existing "major sources" and "area sources" of hazardous air pollutants (HAPs) and establish emissions standards for the categories and subcategories. These emission standards are known as the National Emission Standards for Hazardous Air Pollutants (NESHAP). EPA codified these standards at 40 C.F.R. Parts 61 and 63.

2. On March 16, 1994, EPA promulgated the General Provisions for the NESHAP for Source Categories (MACT General Provisions) at 40 C.F.R. §§ 63.1 through 63.16. See 59 Fed. Reg. 12430 (1994).

3. "Major Source" is defined as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence. See 42 U.S.C. § 7412(a)(1) and 40 C.F.R. § 63.2.

4. "Area Source" is defined as any stationary source of hazardous air pollutants that is not a major source. See 42 U.S.C. § 7412(a)(2) and 40 C.F.R. § 63.2.

5. "Stationary source" is defined as "any building, structure, facility, or installation, which emits or may emit any air pollutant." 42 U.S.C. § 7411(a)(3) and 40 C.F.R. § 63.2.

6. "Hazardous air pollutant" is defined as "any air pollutant listed in or pursuant to" Section 112(b) of the CAA. 42 U.S.C. § 7412(a)(6) and 40 C.F.R. § 63.2.

7. Pursuant to Section 112 of the Act, the EPA promulgated the NESHAP for Secondary Nonferrous Metal Processing Area Sources 40 C.F.R. Part 63, Subpart TTTTTT, 40 C.F.R. §§ 63.11462 – 63.11474, on December 26, 2007. 72 Fed. Reg. 73207.

8. The NESHAP for Secondary Nonferrous Metals Processing Area Sources at 40 C.F.R. Part 63, Subpart TTTTTT, applies to the owner or operator of a secondary nonferrous metals processing facility that is an area source of hazardous air pollutants (HAP) emissions. 40 C.F.R. § 63.11462(a).

9. The NESHAP, at 40 C.F.R. § 63.11463(a) provides that this subpart applies to any existing or new affected source located at a secondary nonferrous metals processing facility.

10. The NESHAP, at 40 C.F.R. § 63.11463(b) provides that the affected source includes all crushing and screening operations at a secondary zinc processing facility and all furnace melting operations located at any secondary nonferrous metals processing facilities.

11. The NESHAP, at 40 C.F.R. § 63.11463(d) states that an affected source is new if you commenced construction or reconstruction of the affected source after September 20, 2007.

12. The NESHAP, at 40 C.F.R. § 63.11472 defines "bag leak detection system" as a system that is capable of continuously monitoring relative particulate matter (dust loadings) in the exhaust of a baghouse to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

13. The NESHAP, at 40 C.F.R. § 63.11468(c)(1), requires the owner and operator of a new affected source that is an area source of HAP to install, operate, and maintain a bag leak detection system (BLDS) that must meet the specifications and requirements in paragraphs (c)(1)(i) through (vii). This includes:

a. The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter (PM) emissions at concentrations of 1 milligram per dry standard cubic meter (0.00044 grains per actual cubic foot) or less.

b. The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).

c. The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (c)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.

d. In the initial adjustment of the bag leak detection system, you must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.

e. Following initial adjustment, you shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided in paragraph (c)(1)(vi) of this section.

f. Once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (c)(2) of this section.

g. You must install the bag leak detection sensor downstream of the fabric filter.

h. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

14. The NESHAP, at 40 C.F.R. § 63.11468(c)(2) requires the owner or operator of the new affected source that is an area source of HAP to develop a site-specific monitoring plan for each BLDS and operate and maintain the BLDS according to the site-specific monitoring plan at all times.

15. The NESHAP, at 40 C.F.R. §§ 63.11468(c)(2)(i) through (vi) requires each monitoring plan to describe the following:

i. Installation of the bag leak detection system;

j. Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

k. Operation of the bag leak detection system, including quality assurance procedures;

l. How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

m. How the bag leak detection system output will be recorded and stored; and

n. Corrective action procedures as specified in paragraph (c)(3) of this section. In approving the site-specific monitoring plan, the Administrator or delegated authority may allow owners and operators more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

16. The NESHAP, at 40 C.F.R. § 63.11465(b) requires emissions from each existing affected source be routed through a fabric filter or baghouse that achieves a PM control efficiency of at least 99.5 percent or an outlet PM concentration of 0.023 grams per dry standard cubic meter (g/dcsm) (0.010 gains per dry standard cubic feet (gr/dscf)).

17. The NESHAP, at 40 C.F.R. § 63.11471 states that a facility must comply with the requirements of the NESHAP General Provisions at 40 C.F.R. Part 63 Subpart A including, but not limited to 40 C.F.R. § 63.6(e)(1).

18. The NESHAP, at 40 C.F.R. § 63.6(e)(1)(i) states that at all times, including periods of startup, shutdown, and malfunction, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

Factual Background

19. Imperial Zinc owns and operates a secondary nonferrous metals processing facility located at 1031 East 103rd Street, Chicago, Illinois 60628. The facility uses furnaces melting operations to melt post-consumer nonferrous metal scrap to make ingots and blocks.

20. Imperial Zinc owns and operates four scrap pot furnaces (Furnaces #1-4) and two rotary furnaces (Rotary #1 and #2) that process secondary zinc at the Facility (NESHAP Subpart TTTTTT Furnaces).

21. Based on the Enforcement and Compliance History Online Air Pollutant Report, Imperial Zinc emitted less than 10 tons per year of any hazardous air pollutant and less than 25 tons per year of any combination of hazardous air pollutants from at least 2012 to 2021; therefore, Imperial Zinc is an area source of HAP.

22. Imperial Zinc's emissions from its NESHAP Subpart TTTTTT Furnaces, among other emission units, are vented to a baghouse. Emissions from the baghouse exhaust to the atmosphere via an exhaust stack.

23. Imperial Zinc's facility is subject to requirements of the NESHAP for Secondary Nonferrous Metals Processing Area Sources at 40 C.F.R. Part 63, Subpart TTTTTT.

24. Imperial Zinc constructed the NESHAP Subpart TTTTTT Furnaces in 2010.

25. Imperial Zinc's NESHAP Subpart TTTTTT Furnaces are new affected sources, as defined by the NESHAP.

26. On December 18, 2015, Imperial Zinc conducted a performance test to demonstrate compliance for PM and visible emission on the furnace baghouse exhaust stack (the Performance Test).

27. The Performance Test demonstrated compliance with the emission limits at 40 C.F.R. § 63.11465(b) with, among other things, a fan speed between 53.2-59.4 hertz (Hz).

28. On April 12th, 2016, EPA issued an Administrative Compliance Order (2016 ACO) to Imperial Zinc that required, among other things, Imperial Zinc to operate the capture system and baghouse consistent with the operating parameters established during the performance test conducted on December 18th, 2015, including volumetric air flow, fan speed, and pressure drop. (Paragraph 34 of 2016 ACO).

29. On June 28th, 2021, EPA inspected the Facility.

30. On February 8th, 2022, EPA issued an information request (the Information Request) to Imperial Zinc pursuant to Section 114 of the CAA, 42 U.S.C. § 7414.

31. On March 18th, 2022, Imperial Zinc submitted the requested documents from the Information Request. Imperial Zinc submitted, among other things:

a. Baghouse operating logs which include records of fan speed;

b. Manufacturer's operation and service manual for the baghouse;

c. BLDS site-specific monitoring plan dated September 2014; and

d. Narrative explanation that "there have been no BLDS alarms in the past 5 years".

32. Imperial Zinc's baghouse operating logs state that the required operating range for fan speed is 53.2-59.4 Hz, consistent with the Performance Test.

33. Imperial Zinc's baghouse operating logs shows that from February 16, 2021, through July 13th, 2021, Imperial Zinc operated the fan at a speed below 53.2 Hz.

34. The baghouse manufacturer's operation and service manual states that proper operation of the baghouse consists of, among other things, checking the fan and motor to ensure proper rotations per minute (rpm) and if the fan rpm is low, to check drive ratio between the fan and motor, check for slippage, and retighten/replace as required.

35. Imperial Zinc's BLDS site-specific monitoring plan states, among other things, the system alarm set-point is established by setting a baseline signal and then setting an alarm level at two times the maximum height of a typical cleaning spike.

36. The BLDS site-specific monitoring plan states that initial and periodic adjustments are established based on input from the supplier of the BLDS along with recommendations provided in the USEPA Fabric Filter Bag Leak Detection Guidance document. The BLDS site-specific monitoring plan also states the system alarm set-point is established by setting a baseline signal and then setting an alarm level at two times the maximum height of a typical cleaning spike.

37. The USEPA Fabric Filter Bag Leak Detection Guidance document states, among other things, that:

a. The response time should be set such that the baseline signal is smoothed and momentary high signals are damped, but cleaning peaks can still be seen; a response time of 5-10 seconds is recommended. *See* Section 5.2.4; and,

b. The use of delay time is not recommended. *See* Section 5.1.

38. On July 11, 2022, EPA requested additional information from Imperial Zinc.

39. On August 1, 2022, Imperial Zinc submitted the requested information including:

a. Alarm set points for the BLDS are 20% with a 3-second delay; and,

b. Cleaning peak information including, but not limited to:
   i. that cleaning peaks can only be observed by physically observing the digital display when the spike occurs; and
   ii. that the cleaning peaks are so small that they are not able to be identified on the chart recording.

40. As the owner and operator of a source subject to the NESHAP for Secondary Nonferrous Metals Processing Area Sources, Imperial Zinc was required to comply at all times relevant to this FOV with the requirements of the NESHAP for Secondary Nonferrous Metals Processing Area Sources.

Violations

41. By failing to operate the baghouse fan speed at the required operating range of the fan speed, 53.2-59.4 Hz, from February 16, 2021, through July 13th, 2021, Imperial Zinc failed to operate and maintain the affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with good air pollution control practices in violation of 40 C.F.R. § 63.6(e)(1) and failed to ensure compliance with 40 C.F.R. § 63.11465(b).

42. By failing to follow the USEPA Fabric Filter Bag Leak Detection Guidance document by setting the response time at a level that does not allow cleaning peaks to be seen and using a delay time, Imperial Zinc failed to operate and maintain the BLDS according to the site-specific monitoring plan, for the past five years in violation of 40 C.F.R. § 63.11468(c)(2) and 40 C.F.R. § 63.6(e)(1)(i).

43. By failing to set the alarm level at two times the maximum height of a typical cleaning spike, Imperial Zinc failed to operate and maintain the BLDS according to the site-specific monitoring plan, for the past five years in violation of 40 C.F.R. § 63.11468(c)(2).

Environmental Impact of Violations

44. These violations have caused or can cause excess emissions of PM.

45. PM, especially fine particulates, contains microscopic solids or liquid droplets, which can get deep into the lungs and cause serious health problems. Particulate matter exposure contributes to, among other things irritation of the airways, coughing, and difficulty breathing.

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